



"Kornder, Steve"
<steve.kornder@sts.aecom.com>

10/10/2007 03:43 PM

US EPA RECORDS CENTER REGION 5



476034

To Cathleen Martwick/R5/USEPA/US@EPA, Mary
Fulghum/R5/USEPA/US@EPA, VERNETA
SIMON/R5/USEPA/US@EPA, EUGENE
cc "Baratta, Bob" <bbaratta@freebornpeters.com>, "Paul
Deasy" <Paul.Deasy@HappoldConsulting.com>,
"MacDonell, Don" <don.macdonell@sts.aecom.com>
bcc

Subject Spire Site - Construction Proposed for the February 2007
Investigation Area

Good Afternoon:

Construction on the Spire site continues to move forward at a rapid pace. As such, it is necessary for construction to occur within the February 2007 investigation area. We believe that the analytical results and screening document the absence of radiologically-impacted soil in this investigation area and that no additional investigation is required (refer to the August 27 email below for additional investigation details). Since we have had no formal response otherwise, we are preparing to commence construction related activities in this area.

Please feel free to contact us if you have any questions or comments.

Sincerely,

Steve Kornder

phone 847.279.2448
fax 847.279.2510

STS

750 Corporate Woods Parkway
Vernon Hills, IL 60061
T 847.279-2500 F 847.279.2510
steve.kornder@sts.aecom.com

From: Kornder, Steve

Sent: Monday, August 27, 2007 4:58 PM

To: 'Simon.Verneta@epamail.epa.gov'; 'Jablonowski.Eugene@epamail.epa.gov'; 'Martwick.
Cathleen@Epa. Gov (martwick.cathleen@epa.gov)'; 'Mary Fulghum (fulghum.mary@epa.gov)'

Cc: 'Baratta, Bob'; Vickery, Randall G.; MacDonell, Don

Subject: Summary of Investigation Procedures and Isotope Results

Dear Verneta and Gene:

Per our discussion on Thursday August 20, 2007 I am forwarding some additional discussion regarding the investigation and radioisotope results for samples collected at 400 N. Lake Shore Drive on February 23, 2007. To reiterate (refer to my email attached below), prior to conducting excavation activities on February 23, 2007 discrete samples were collected from the two small/shallow test pits within an excavation area where elevated gamma readings were observed. The excavated area was approximately a 10 X 15 meter area (grids O-Q/21-22), while the test pits were each only a few square feet in size. The western sample location was within a shallow test pit (grid location O.5/21.5), which had a maximum gamma reading of 21,000 cpm, while the eastern test pit area (P.5/21.5) had a maximum reading of about 18,000 cpm (versus a cutoff threshold of about 19,000 cpm). It should be noted that the elevated gamma

2

—

NutranI results reported to the USEPA in my February 28, 2007 email (see attached email and email below) included two 5-vial sample sets (P-Q/21-22 and O-P/21-22). Although not initially collected as verification samples, these sample sets were collected in a manner similar to that done for verification sampling (i.e., a composite sample split into 5-vials). Each sample set was collected over a limited area (less than 5 X 5 meters) from the soil below the locations where the elevated gamma readings were observed. Gamma surveys conducted by Glenn Huber and Gene Jablonowski (USEPA) did not indicate elevated gamma in the lift soil from which the samples were collected. Thus, these are essentially verification samples and NutranI results (as well as those of the USEPA) confirm the absence of radiologically-impacted soil remaining in the investigation area.

Location	USEPA Sample ID
----------	--------------------

		Ra-226	Th-232	Total	Average
P.5/21.5	01	5.23	1.14	6.37	-
O.5/21.5	02 & 03	5.93	1.23	7.16	-
P-Q/21-22 #1		3.83	0.1	3.93	3
P-Q/21-22 #2		2.9	0	2.9	
P-Q/21-22 #3	04	2.55	0.21	2.76	2
P-Q/21-22 #4		2.35	0.47	2.82	8
P-Q/21-22 #5		3.19	0.79	3.98	
O-P/21-22 #1		0	1.93	1.93	2
O-P/21-22 #2		1.79	0.11	1.9	
O-P/21-22 #3	05	2.69	0.69	3.38	3
O-P/21-22 #4		2.31	0.25	2.56	7
O-P/21-22 #5		1.11	0.96	2.07	

Notes: 1-Total Radium equals Ra-226 plus Ra-228

Finally regarding the discrete samples (USEPA sample ID #s 01, 02 & 03 as well as the STS sample splits P.5/21.5 and O.5/21.5), it is apparent that different combinations of the radioisotope and/or daughter concentrations can lead to total radium approximations that are either over or under the cleanup threshold of 7.1 pCi/g. In fact, the analysis of the sample split (USEPA IDs 02 and 03) gives results that are both under and over the cleanup threshold (refer to table below). This is due to the in part to the heterogeneous nature of soil, the inherent variability of the analytical techniques and the fact that the radioisotope concentrations in the sample are very close to the cleanup threshold value.

STS believes that the collection of discrete samples at the highest gamma locations overestimates risk. In particular, STS would like to see multiple sample techniques (such as the USEPA verification sampling methodology) used to determine the isotope concentration for an area to determine whether it is impacted. Had the verification sampling technique been utilized to assess the horizon (lift) with the maximum observed gamma readings, the results would have been below the cleanup threshold. In fact, it should be pointed out that the average of the USEPA results for the two areas with the highest gamma readings is below the cleanup threshold (6.35 pCi/g - average of 5.71 and 7.35 pCi/g). Thus, STS believes that on risk and/or verification based approach the results do not indicate the presence of radiologically-impacted above the threshold.

		USEPA Report	
--	--	--------------	--

Location	USEPA Sample ID	pCi/g)	Total ¹	Average
			8/10/2007	
			Ra-226	
P.5/21.5	01		5.07	
O.5/21.5	02		7.33	7.35
O.5/21.5	03		0.96	
P-Q/21-22	04		2.99	
O-P/21-22	05		2.83	2.09
O-P/21-22	05-dup		0.92	

Notes: 1-Total Radium equals Ra-226 plus Ra-228

In conclusion, the investigation program performed on February 23, 2007 by STS and the USEPA did not detect a quantity of material sufficient to conduct excavation. The material associated with the two small areas of elevated gamma readings was screened multiple times by both Glenn Huber as well as the USEPA without the detection of a quantity or gamma readings that were believed to be sufficient to require excavation. Thus, based on the field survey results and the various sample results, STS does not believe that additional field investigation is necessary or warranted in this area. As a result, STS requests USEPA acknowledge that construction related activities may proceed in this area.

I look forward to talking with you more regarding the subject on Tuesday August 28. Thank you again for

your assistance.

Sincerely,

Steve Kornder

phone 847.279.2448
fax 847.279.2510

STS

750 Corporate Woods Parkway
Vernon Hills, IL 60061
T 847.279-2500 F 847.279.2510
steve.kornder@sts.aecom.com

From: Kornder, Steve

Sent: Wednesday, February 28, 2007 1:35 PM

To: 'Gene Jablonowski (jablonowski.eugene@epa.gov)'

Subject: 400 N. Lake Shore Drive - Investigation Procedures and Nutranl Results

Good Afternoon Gene:

I have attached a copy of the analytical results (see attached PDF) for the composite samples collected from the excavated lift soils as well as the two discrete samples collected from the reddish ash material exposed in the two shallow test pits (12 inches deep and about 2-3 feet across). The paragraphs below briefly describe our agreed approach and the results of the field screening performed. I will plan to contact you shortly to determine if you have any additional comments regarding the outlined approach and/or the analytical results.

Sincerely,

Steve Kornder

phone 847.279.2448
fax 847.279.2510
kornder@stsconsultants.com

Investigation Summary

On Friday February 23, 2007 a radiological investigation was conducted on a small 5 X 10 meter portion of the south parcel at 400 N. Lake Shore Drive property. Steve Kornder (STS), Glenn Huber (Huber Consultants), Gene Jablonowski (USEPA) and Verneta Simon (USEPA) were all present for the field work. Lift excavations (18-inch lift removal) and surveying had previously delineated a 5 X 10 meter area where gamma readings greater than twice background were observed. Two shallow test pits had exposed a reddish ash material within this area which appeared to be responsible for the elevated readings. With the exception of the two shallow test pits, the reddish material was not observed at the surface of the area. More significantly, although the gamma readings were elevated relative to twice background (~14,000 cpm), the surface gamma readings were still less than the cutoff threshold of about 19,000 cpm.

Prior to conducting the excavation activities on February 23, it was agreed that samples would be collected from the two test pit areas. According to Glenn Huber, who was in the excavation when Gene collected the samples, the western sample location that was within the shallow test pit (grid location O.5/21.5) had a maximum gamma reading of 21,000 cpm, while the eastern spot (P.5/21.5) had a reading of about 18,000 cpm (versus a cutoff threshold of about 19,000 cpm). It is also my understanding that the elevated readings at the western location (O.5/21.5) were restricted to a very small area (i.e., 1-2 ft²) and that the sample was collected at a depth of about 3-6 inches below the surface.

Since the layer responsible for the elevated readings appeared to be restricted to the reddish material

located beneath the surface, our agreed approach was to scrape a thin (3-inch) layer of the clean soil (i.e., readings less than the threshold) from the surface to expose the impacted soil beneath. Removal of the clean surface layer would thereby minimize the incorporation of clean soil with any impacted material. This process is typical of the procedures utilized historically in Streeterville projects for the removal of impacted material (i.e., basically remove clean soil in thin lifts to expose the impacted soil).

The 5 X 10 meter area was roughly divided in half and a series of 3-inch lifts removed from each area. As indicated above, our intention was to remove the clean soil at the surface and super-sack any exposed soil that was radiologically-impacted. Table 1 below presents the maximum gamma readings following the removal of each lift. No gamma readings greater than the Ludlum threshold value were noted by either Glenn Huber or the USEPA (both conducting separate surveys with their own equipment). Furthermore, although the western sample location (O.5/21.5) showed elevated readings at the depth from which the sample was collected, none of the readings exceeded the cutoff threshold for the Ludlum instruments. As a result, no material was excavated and placed into super-sacks. Finally, each lift of clean soil was surveyed a second time after it was scraped to the side of the excavation area and surveyed a third time after it was spread into a thin layer adjacent to the excavation area. No readings greater than the Ludlum threshold cutoff values were observed in any of these additional surveys by either Glenn Huber or the USEPA.

Table 1
Maximum Gamma Readings for Undisturbed Lift Surfaces

Lift	Depth (inches)	Gamma Readings (cpm)	O - P / 21-22
1	57	15,000	14,800
2	60	16,800	14,400

			1 0 0
3	63	13,400	1 4
			1 0 0
4	66	10,200	1 0
			5 0 0
5	69	9,800	1 1
			2 0 0
6	72	7,600	9
			8 0 0
7	75	Not applicable	

Sincerely,

Steve Kornder

phone 847.279.2448

fax 847.279.2510

kornder@stsconsultants.com



Nutranl Results.pdf

Nutranl Gamma Spec Report - 400 N. Lakeshore Drive (STS)

Stan A. Huber Consultants, Inc.
200 North Cedar Road
New Lenox, IL 60451
(800) 383-0468

Soil Samples Collected on 2/23/07

Sample ID	Analysis Date	Sample Group	Description	Weight	U-238 Activity	U-238 Uncertainty	Th-232 Activity	Th-232 Uncertainty	Ra-226 Activity	Ra-226 Uncertainty	Total Radium Activity	Total Radium Uncertainty
1399	2/24/2007	LSD Spot Sample	S2996 P.5-21.5	23.4	9.16	4.2	1.14	1.23	5.23	1.67	6.37	2.074078108
1400	2/24/2007	LSD Spot Sample	S2997 O.5-21.5	23.6	11	4.12	1.23	1.2	5.93	1.64	7.16	2.032141727
1403	2/25/2007	STS LSD	P-Q/21-22 EPA#1	28.3	7	4.92	0.1	1.46	3.83	2	3.93	2.476206777
1404	2/25/2007	STS LSD	P-Q/21-22 EPA#2	29	12.8	4.38	-0.74	1.23	2.9	1.71	2.16	2.106418762
1405	2/25/2007	STS LSD	P-Q/21-22 EPA#3	29.4	8.5	4	0.21	1.16	2.55	1.56	2.76	1.944016461
1406	2/25/2007	STS LSD	P-Q/21-22 EPA#4	29.2	7.56	4.94	0.47	1.43	2.35	1.99	2.82	2.450510151
1407	2/25/2007	STS LSD	P-Q/21-22 EPA#5	29.5	3.18	5.06	0.79	1.53	3.19	2.1	3.98	2.598249411
1408	2/25/2007	STS LSD	O-P/21-22 EPA#1	29.3	10.76	4.87	1.93	1.36	-0.02	1.78	1.91	2.240089284
1409	2/25/2007	STS LSD	O-P/21-22 EPA#2	29.2	12.71	3.81	0.11	1.09	1.79	1.44	1.9	1.806017719
1410	2/25/2007	STS LSD	O-P/21-22 EPA#3	29.4	7.78	3.85	0.69	1.12	2.69	1.51	3.38	1.880026596
1411	2/25/2007	STS LSD	O-P/21-22 EPA#4	28.1	6.74	4.45	0.25	1.29	2.31	1.76	2.56	2.182131985
1412	2/25/2007	STS LSD	O-P/21-22 EPA#5	29.8	9.16	3.9	0.96	1.12	1.11	1.49	2.07	1.864001073

Analyzed by Canberra Genie 2000 Nal Gamma Spec System
2"x2" Nal detector w/ NUTRANL software package